

ADDITIONAL NOTES ON THE ERIOCAULACEAE. LXII

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PAEPALANTHUS STEGOLEPOIDES Moldenke

Additional bibliography: Moldenke, *Phytologia* 33: 202. 1976.

Additional citations: VENEZUELA: Bolívar: Steयरmark & Wurdack 822 (N); Wurdack 34315 (N--type).

PAEPALANTHUS STEGOLEPOIDES var. ACUTALIS Moldenke, *Phytologia* 15: 463. 1968.

Synonymy: Paepalanthus stegolepoides var. actualis Moldenke apud Hocking, *Excerpt. Bot. A.13*: 506, sphalm. 1968.

Bibliography: Hocking, *Excerpt. Bot. A.13*: 506. 1968; Moldenke, *Biol. Abstr.* 49: 3245. 1968; Moldenke, *Phytologia* 15: 463. 1968; Moldenke, *Résumé Suppl.* 16: 6 (1968) and 18: 13. 1969; Moldenke, *Fifth Summ.* 1: 167 (1971) and 2: 591 & 958. 1971.

Citations: BRAZIL: Amazônas: Maguire, Murça Pires, & Maguire 60509 (N--type).

PAEPALANTHUS STENOLEPIS Alv. *Silv., Fl. Mont.* 1: 43-44, pl. 22. 1928.

Bibliography: Alv. *Silv., Fl. Mont.* 1: 43-44 & 444, pl. 22. 1928; Wangerin in Just, *Bot. Jahresber.* 57 (1): 477. 1937; A. W. Hill, *Ind. Kew. Suppl.* 9: 200. 1938; Worsdell, *Ind. Lond. Suppl.* 2: 184. 1941; Moldenke, *Known Geogr. Distrib. Erioc.* 16 & 54. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 88 & 211. 1949; Moldenke, *Résumé* 102 & 490. 1959; Moldenke, *Fifth Summ.* 1: 167 (1971) and 2: 958. 1971.

Illustrations: Alv. *Silv., Fl. Mont.* 1: pl. 22. 1928.

This species is based on A. Silveira 801 from "Secus margines 'capoeiras' prope Serrinha, inter Grão-Mogol et Diamantina," Minas Gerais, Brazil, collected in July, 1926, and deposited in the Silveira herbarium. Silveira (1928) comments that the "Species ob forma bractearum involucrantium certe distinctissima". Thus far it is known only from the original collection.

PAEPALANTHUS STEPHANOPHORUS Alv. *Silv., Fl. Mont.* 1: 40-42, pl. 20. 1928.

Bibliography: Alv. *Silv., Fl. Mont.* 1: 40-42 & 444, pl. 20. 1928; Wangerin in Just, *Bot. Jahresber.* 57 (1): 477. 1937; A. W. Hill, *Ind. Kew. Suppl.* 9: 200. 1938; Worsdell, *Ind. Lond. Suppl.* 2: 184. 1941; Moldenke, *Known Geogr. Distrib. Erioc.* 16 & 54. 1946; Moldenke, *Known Geogr. Distrib. Verbenac.*, [ed. 2], 88 & 211. 1949; Moldenke, *Résumé* 102 & 490. 1959; Moldenke, *Fifth Summ.* 1: 167 (1971) and 2: 958. 1971.

This species is based on A. Silveira 803 from "In campis siccis argillosisque inter Itacambira et Juramento", Minas Gerais, Brazil, collected in July, 1926, and deposited in the Silveira herbarium.

On page 414 of his work (1928) Silveira cites the type locality as "prope Juramento". Thus far the species is known only from the original collection.

*PAEPALANTHUS STEREOPHYLLUS* Ruhl. in Engl., Pflanzenreich 13 (4-30): 193. 1903.

Synonymy: *Paepalanthus stercophyllus* Ruhl. ex Moldenke, Phytologia 31: 405, in syn. 1975.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 189, 193, 194, & 292. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; Alv. Silv., Fl. Mont. 1: 222 & 414. 1928; Moldenke, Known Geogr. Distrib. Erioc. 16 & 54. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 88 & 211. 1949; Moldenke, Résumé 102 & 490. 1959; Moldenke, Fifth Summ. 1: 167 (1971) and 2: 958. 1971; Moldenke, Phytologia 25: 162 (1973), 31: 405 (1975), and 33: 145. 1976.

This species is based on Glaziou 19974 from "Biribiry, am Tombador auf trockenem Campos", Minas Gerais, Brazil, flowering in March, and deposited in the Berlin herbarium where it was photographed by Macbride as his type photograph number 10648. Ruhland (1903) says of it: "*P. falcifolio* valde affinis, cuius fortasse nihil nisi varietas est. Differt jam primo aspectu ab illa vaginis transverse truncatis, ore fasciculos complures (plerumque 3) ciliarum gerentibus, ibique semper plus vel minus hyalinis, nec brunneolis neque adeo perspicue nervosis. Bracteae involucrentes dilutius coloratae, et folia ramorum longius acuminata." He cites only the type specimen, but Silveira (1928) cites A. Silveira 488 from the Serra da Raiz, Minas Gerais, collected in 1908. He asserts that the species is closely related to *P. cabralensis* Alv. Silv. -- for the differences he enumerates see my notes in this series under *P. cabralensis*.

Citations: BRAZIL: Minas Gerais: Glaziou 19974 [Macbride photos 10648] (B--type, N--photo of type, N--photo of type, W--photo of type, Z--isotype); Hatschbach & Ahumada 31688 (N, W--2706694, Z).

*PAEPALANTHUS STEYERMARKII* Moldenke, Phytologia 2: 231, nom. nud. 1947; Fieldiana Bot. 28: 125--126. 1951.

Bibliography: Moldenke, Phytologia 2: 381. 1947; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 64 & 211. 1949; Moldenke, Fieldiana Bot. 28: 125--126. 1951; J. A. Steyermark, Fieldiana Bot. 28: 1158. 1957; Moldenke, Résumé 72 & 490. 1959; G. Taylor, Ind. Kew. Suppl. 12: 101. 1959; J. A. Steyermark, Act. Bot. Venez. 1: 41 & 223. 1966; Moldenke, Fifth Summ. 1: 126 (1971) and 2: 958. 1971.

This species is based on J. A. Steyermark 59369, collected in sandy wet ground with *Stegolepis* and *Brocchinia* on a large mesa on the Gran Sabana between Mission of Santa Teresita de Kavanayén, northwest of the Río Karauí, at an altitude of 1220 meters, Bolívar, Venezuela, on October 24, 1944, and is deposited in the Brit-

ton Herbarium at the New York Botanical Garden. The species is apparently closely related to P. cristatus Moldenke, which differs in its blunt brunneous involucre bractlets, larger receptacular bractlets which are long-villous over the entire back, larger cuneate sepals in the staminate florets, smaller and bearded sepals in the pistillate florets, the glabrescent leaves and peduncles, and other characters.

Steyermark and his associates describe P. steyermarkii as "forming clumps, branched", "forming dense globular mounds 10 cm. across", or "forming large depressed-globose gray-green clumps 0.5--2 m. in diameter", the leaves dusty-gray, and the heads gray or gray-white, growing in sandy scrub savannas. Maguire says that it is "common on drier sand on bush islands" and in Heliophora areas. Ruiz-Teran & López-Palacios describe it as a "Hierba rosulada, ramificada. Hojas verde claras, blanco-pubescentes. Escapos de 2--3 cm. Capítulos hemisféricos, con involucro pardo y flores blancas a blanco parduscas", growing in "orillas de la carretera". It has been encountered at altitudes of 1000--1500 meters, flowering in October, December, and February, fruiting in February.

This plant greatly resembles Syngonanthus savannarum Moldenke in habit, but differs in having the pubescence of its leaves and peduncles spreading, while in Syngonanthus savannarum it is appressed, and, of course, in the technical floral characters.

Material has been misidentified and distributed in some herbaria as Syngonanthus steyermarkii Moldenke.

Citations: VENEZUELA: Bolívar: Koyama & Agostini 7435 (N); B. Maguire 33241 (Mu, N); Ruiz-Terán & López-Palacios 11435 (Mi); J. A. Steyermark 59369 (N--type, S--isotype), 111281 (Ld); Steyermark & Aristeguieta 64 (Z); Steyermark, Smith, Smith, Dunsterville, & Dunsterville 105473 (Ld); Steyermark, Steyermark, Wurdack, Wurdack, & Wiehler 106650 (Ld).

PAEPALANTHUS STRIATUS Ruhl. in Engl., Pflanzenreich 13 (4-30): 149. 1903.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 128, 149, & 292. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; Moldenke, Known Geogr. Distrib. Erioc. 16 & 54. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 88 & 211. 1949; Moldenke, Résumé 102 & 490. 1959; Moldenke, Fifth Summ. 1: 167 (1971) and 2: 958. 1971; Angely, Fl. Anal. & Fitogeogr. Est. S. Paulo, ed. 1, 6: 1160 & Ind. 21. 1972.

The Angely (1972) reference cited above bears a title-page date of "1970", but was not actually published until 1972.

The species is based on Glaziou 7994 and Schwacke 1912 from São Paulo, Brazil, the former from "Campos da Bocaina, in Gehölz nahe den Quellen des Rio Parahyba", flowering in February, and the latter from "Serra da Bocaina", collected in flower in March of 1879, both deposited in the Berlin herbarium, where the Glaziou specimen was photographed by Macbride as his type photograph

number 10649. Ruhland (1903) cites only these two collections and comments that the "Species P. regali Mart. proxima esse videtur, sed statim forma bractearum involucrentium differt". The Glaziou cotype collection at Berlin bears a printed label inscribed "Rio de Janeiro", but the collection was apparently actually made in São Paulo.

Citations: BRAZIL: Minas Gerais: Regnell III.1800 (N, S). São Paulo: Glaziou 7994 [Macbride photos 10649] (B--cotype, N--photo of cotype, N--photo of cotype, W--photo of cotype, Z--cotype); Schwacke 1912 (B--cotype).

PAEPALANTHUS STRICTUS Körn. in Mart., Fl. Bras. 3 (1): 319--320. 1863.

Synonymy: Dupatya stricta (Körn.) Kuntze, Rev. Gen. Pl. 2: 746. 1891. Dupatya stricta Kuntze apud Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 145. 1902.

Bibliography: Körn. in Mart., Fl. Bras. 3 (1): 319--320 & 506. 1863; Kuntze, Rev. Gen. Pl. 2: 746. 1891; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 2: 402. 1894; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 145. 1902; Ruhl. in Engl., Pflanzenreich 13 (4-30): 3, 184, 185, 284, & 292. 1903; Alv. Silv., Fl. Mont. 1: 187 & 414. 1928; Ruhl. in Engl. & Prantl, Nat. Pflanzenfam., ed. 2, 15a: 41. 1930; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 2, 145. 1941; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 2: 402. 1946; Moldenke, Known Geogr. Distrib. Erioc. 16, 31, & 54. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 88 & 211. 1949; Moldenke, Phytologia 4: 205. 1953; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 3, 145. 1959; Moldenke, Résumé 102, 282, & 490. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 2: 402. 1960; Moldenke, Fifth Summ. 1: 167 & 486 (1971) and 2: 958. 1971; Moldenke, Phytologia 30: 95. 1975.

This species is based on G. Gardner 5257 & 5258 from somewhere in Minas Gerais, Brazil, deposited in the Berlin herbarium where the former was photographed by Macbride as his type photograph number 10650. Ruhland (1903) cites no other material, but Silveira (1928) cites A. Silveira 819 from Grão Mogol, Minas Gerais, collected in 1926.

Additional & emended citations: BRAZIL: Minas Gerais: G. Gardner 5257 [Macbride photos 10650] (B--cotype, N--photo of cotype, N--photo of cotype, W--photo of cotype), 5258 (B--cotype, It--cotype); Maguire, Mendes Magalhães, & Maguire 49223 (N, Z).

MOUNTED ILLUSTRATIONS: drawings & notes by Körnicke (B).

PAEPALANTHUS STUEBELIANUS Ruhl. in Engl., Pflanzenreich 13 (4-30): 174. 1903.

Synonymy: Eriocaulon caulinum Pennell ex Moldenke, Résumé 286, in syn. 1959. Eriocaulon grandis Pennell ex Moldenke, Résumé 288, in syn. 1959.

Bibliography: Ruhl. in Engl., Pflanzenreich 13 (4-30): 173, 174, & 292. 1903; Prain, Ind. Kew. Suppl. 3: 126. 1908; J. F. Mac-

br., Field Mus. Publ. Bot. 13 (363): 490 & 493. 1936; Moldenke, Known Geogr. Distrib. Erioc. 7 & 54. 1946; Moldenke, Known Geogr. Distrib. Verbenac., [ed. 2], 73 & 211. 1949; Moldenke, Résumé 84, 286, 288, & 490. 1959; Soukup, Biota 5: 302. 1959; Tomlinson in C. R. Metcalfe, Anat. Monocot. 3: 180, 181, 184, 187, 188, & 191, fig. 38 A--C. 1969; Moldenke, Fifth Summ. 1: 142 (1971) and 2: 496, 501, & 958. 1971; Moldenke, Phytologia 30: 83. 1975.

Illustrations: Tomlinson in C. R. Metcalfe, Anat. Monocot. 180 fig. 38 A--C. 1969.

This species is based on Stübel 19a from "Cuesta de Lejia, un Moyobamba", San Martín, Peru, deposited in the Berlin herbarium where it was photographed by Macbride as his type photograph number 10651. Ruhland (1903) comments that "Primum speciem hanc cum praecedenti [P. intermedius Körn.] mihi ignota secundum descriptionem congruere censui. Sed caulis rigidus, folia rigida, pungenti-acuta, non recurvata in nostra specie mihi nota insignia esse videntur. Neque species nostra Paepalantho Bongardii Kunth (sicut P. intermedius auctore Koernicke) habitu similis." He cites only the type collection, but Macbride (1936) adds Raimondi s.n. [Laurel], Weberbauer 4350, and Williams 7571 from the same department.

The species has been collected on white sand, in open areas, in wet sandy barrens, in wet Sphagnum over sand, and in seepage areas on exposed hillsides, or even "locally frequent" in seepages, at altitudes of 2000--3250 meters, flowering in July. Collectors describe the plant as a dwarf herb, matting in saturated organic soil, the inflorescences capitate, the heads and flowers white.

The cheironymous Eriocaulon caulinum is apparently based on F. W. Pennell 15756 and E. grandis on F. W. Pennell 15770 in the Britton Herbarium.

Material of Paepalanthus stuebelianus has been misidentified and distributed as P. intermedius Körn. in some herbaria. Hutchison & Wright 5548 is said to be also represented in the herbaria of the Field Museum (Chicago), Missouri Botanical Garden (St. Louis), Kew, Paris, University of Michigan, Komarov Botanical Institute (Leningrad), and Museo de Historia Natural (San Marcos, Peru), but I have not as yet seen these specimens.

Citations: PERU: Amazonas: Hutchison & Wright 5548 (Mu, N); F. W. Pennell 15756 (N, W--2299416), 15770 (N, W--2299417); Ll. Williams 7571 (W--1540266); Wurdack 1337 (S, W--2403683), 1358 (W--2403685), 1741 (N, W--2403695). San Martín: Stübel 19a [Macbride photos 10651] (B--type, B--isotype, N--photo of type, N--photo of type, W--photo of type).

PAEPALANTHUS SUBCAULESCENS N. E. Br., Trans. Linn. Soc. Lond. Bot., ser. 2, 6: 71. 1901.

Synonymy: Paepalanthus subcaulescens N. E. Br. ex Moldenke, Known Geogr. Distrib. Erioc. 6, 54, & 60, sphalm. 1946.

[to be continued]